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HEMIODOPSIS OCELLATA, A NEW HEMIODONTID CHARACOID FISH (PISCES: CHARACOIDEA) FROM WESTERN SURINAM

Richard P. Vari

Abstract.—*Hemiodopsis ocellata,* an open water species occuring in the black water drainages of western Surinam, is described from several localities within the Corantijn River system basin. The pattern of zig-zag lines on the dorsal portion of the body appears to be unique in the genus.

Introduction

The new species described herein, *Hemiodopsis ocellata,* is widespread in the black waters of the Corantijn River system of western Surinam. Habitats of individuals captured or observed in the wild show that during low water levels this species is primarily an inhabitant of the main river channels and larger open pools and streams rather than the shaded creeks and smaller streams of the rain forest. During high water levels, in contrast, *H. ocellata* apparently travels up smaller tributaries into the flooded rain forest to feed and reproduce. The species has been taken most often in the more readily sampled still or slowly flowing waters. Nonetheless, the capture of a single specimen in the rapidly-flowing waters of Dalbana Creek and observations over several seasons indicate that *H. ocellata* also occurs in waters with high flow velocities. This species is usually found in association with the much more abundant *Hemiodopsis goeldii,* which it closely resembles in overall body form, maximum adult size, and pigmentation pattern (see Böhlke, 1955, fig. 7).

Hemiodopsis ocellata, new species
Fig. 1, Table 1

Holotype.—National Museum of Natural History (USNM) 221175, 170.0 mm standard length (SL), collected by R. P. Vari, 7 December 1979 in the main stream of Dalbana Creek, approximately 150 m upstream of its junction with the Kabalebo River, Nickerie District, Surinam (approx. 4°47′N, 57°29′W).

Paratypes.—1 specimen, USNM 225592, 141.5 mm SL, collected by R. P. Vari and L. R. Parenti, 8 September 1980, in a slow-flowing side channel of the Corantijn River about 180 km from its mouth, Nickerie District, Surinam (approx. 5°08′N, 57°18′W); 2 specimens, USNM 225593, 104.7–113.0 mm SL [1 cleared and counterstained for cartilage and bone] collected by R. P. Vari and L. R. Parenti, 17 September 1980, in a still pool near "Camp Hydro" on an island in the middle of the Corantijn River, Nickerie District, Surinam (approx. 4°22′N, 57°58′W); 4 specimens, USNM 225594, 129.0–142.0 mm SL, collected by H. M. Madarie, 15 May 1980, in a small creek and the surrounding flooded rain forest of the Corantijn River, Nickerie District, Surinam (approx. 5°32′N, 57°10′W).

Diagnosis.—Within the family Hemiodontidae the new species is assignable to

Fig. 1. *Hemiodopsis ocellata*, new species, holotype, USNM 221175, 170.0 mm SL.

Hemiodopsis based on the very slightly protractile jaws (in contrast to the highly protractile jaws of *Bivibranchia* and *Argonectes*), multicuspidate dentition limited to the upper jaw (in contrast to unicuspidate teeth in both jaws in *Michromischodus*), a dorsal fin of moderate height (in contrast to an elongate, anteriorly filamentous dorsal fin in *Pterhemiodus*), and a moderate vertical gradation in scale size (in contrast to a pronounced vertical gradation in scale size in *Hemiodus*). Within *Hemiodopsis* (see Géry 1963 for a discussion of the redefinition of the genus) the 88–96 lateral line scales occurring in *H. ocellata* readily distinguish it from the majority of the species in the genus (*H. gracilis, H. goeldii, H. fowleri, H. thayeri, H. semitaeniata, H. ternetzi, H. immaculata, H. rodolphoi,* and *H. parnaguae*) which as a unit demonstrate a range from 42 to 83 lateral line scales, and from *H. microlepis* and *H. argentea* which have a higher number of

Table 1.—Morphometrics of *Hemiodopsis ocellata*, new species. Standard length is expressed in mm; measurements 1 to 11 are percentages of standard length; 12 to 15 percentages of head length.

		Paratypes (7)	
	Holotype	Range	Average
Standard length	170.0	113.0–141.5	129.6
1. Greatest body depth	29.1	27.4–29.8	29.1
2. Snout to dorsal-fin origin	49.2	42.8–54.0	49.3
3. Snout to anal-fin origin	80.9	80.7–82.9	81.6
4. Snout to pelvic-fin origin	52.8	52.9–54.0	53.4
5. Snout to anus	78.0	77.0–77.9	78.1
6. Origin of rayed dorsal to hypural joint	56.0	53.9–56.3	55.0
7. Least depth of caudal peduncle	10.1	9.1–11.2	10.0
8. Pectoral-fin length	20.0	19.0–21.2	19.7
9. Pelvic-fin length	21.8	21.3–24.1	22.6
10. Dorsal-fin height	26.4	25.1–30.2	27.7
11. Head length	26.1	25.0–26.4	25.6
12. Orbital diameter	30.0	29.0–32.4	30.1
13. Snout length	31.0	29.2–34.2	31.6
14. Postorbital length	38.4	37.3–40.0	38.8
15. Interorbital width	36.8	34.9–38.1	36.1

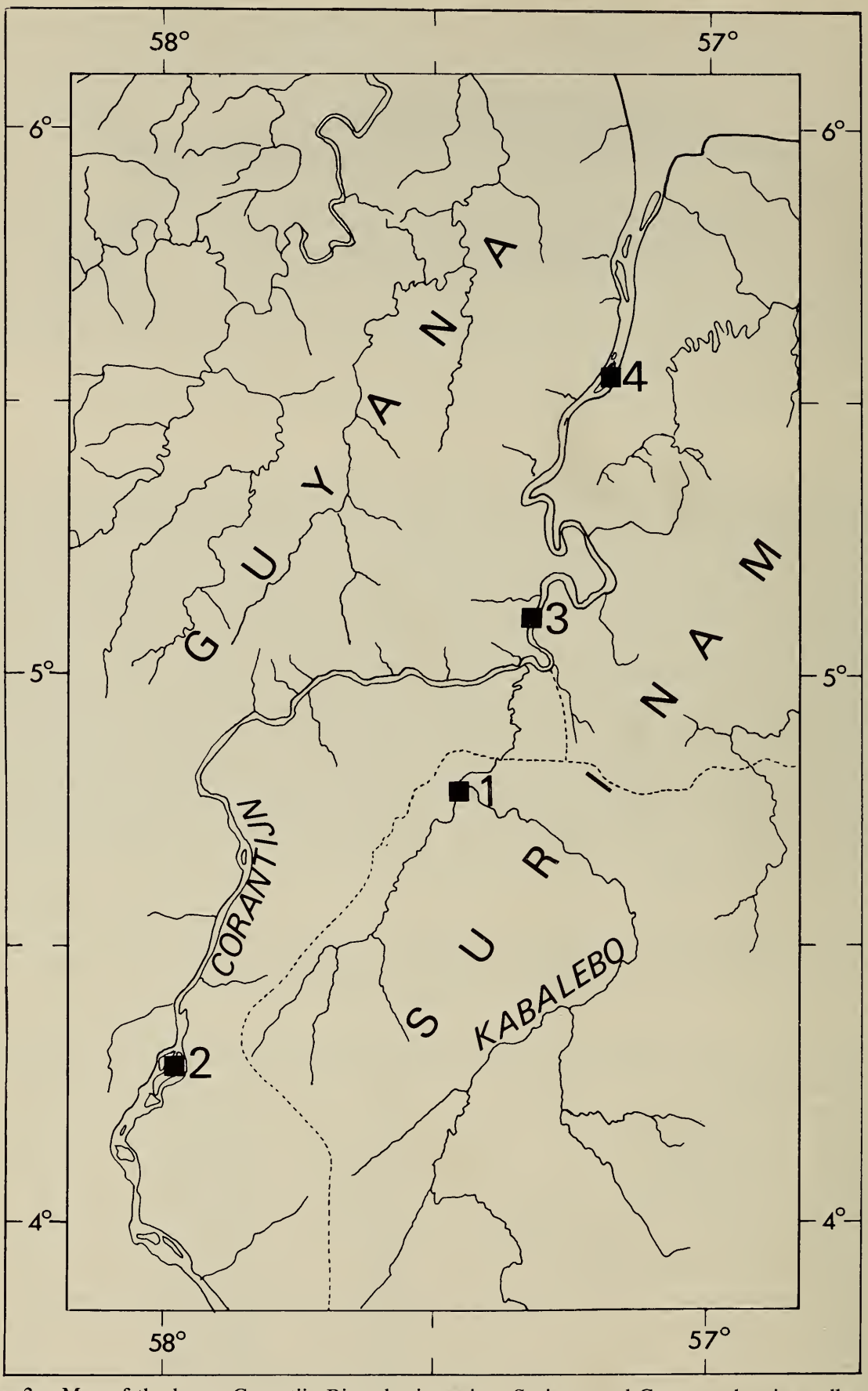

Fig. 2. Map of the lower Corantijn River basin region, Surinam and Guyana, showing collecting localities for the following specimens of *Hemiodopsis ocellata* (dotted line depicts the road to Camp Matapi and Camp Amotopo): 1, collection locality of holotype, USNM 221175; 2, collection locality of 2 paratypes, USNM 225593; 3, collection locality of 1 paratype, USNM 225592; 4, collection locality of 4 paratypes, USNM 225594.

pored lateral line scales (110 to 112 and 120 to 125 respectively). The only *Hemiodopsis* species having a lateral line scale count approximating that of *H. ocellata* is *H. parnaguae* of the upper Parnaiba River system (80–83 lateral line scales; Eigenmann and Henn 1916:87). However, in addition to the differences in the number of pored lateral line scales, these species are distinguishable by the hyaline anal fin of *H. ocellata* which contrasts with the presence of a distal black band on the fin in *H. parnaguae* (see Eigenmann and Henn 1916, Pl. 17). Furthermore, *H. parnaguae* lacks the distinctive dorsal zig-zag patterning characteristic of *H. ocellata*.

Description.—Table 1 gives morphometrics of the holotype and paratypes. Body relatively slender, slightly compressed laterally. Greatest body depth in region of origin of rayed dorsal fin. Dorsal profile of body gently curved from tip of snout to interorbital region, slightly convex or straight from that area to origin of rayed dorsal fin. Body profile at base of rayed dorsal fin straight, posteroventrally sloped. Dorsal profile of body nearly straight from rear of insertion of rayed dorsal fin to upper margin of caudal peduncle. Ventral profile of head smoothly convex from tip of lower lip to below base of pectoral fin; nearly straight from that point to origin of anal fin.

Head relatively small, snout obtuse with mouth subinferior. Anterior margin of lower jaw cresent-shaped. Upper jaw moderate, very slightly protractile, posterior margin of maxilla extends slightly posterior of a vertical through posterior border of rear nostril. Nostrils approximate, anterior opening round, posterior cresent-shaped. Eye relatively large. An extensive, horizontally ovoid "adipose eyelid" (a thick transparent connective tissue layer) extends from posterior margin of rear nostril to middle of opercle (less developed posteriorly in smaller specimens). Adipose eyelid with an ovoid, vertically-elongate opening overlying pupil. Fronto-parietal fontanel extensive, extending into rear of ethmoid. Parietals completely separated, frontals in contact only at epiphyseal bar. 4 branchiostegal rays on each side; 1 on posterior ceratohyal, 3 on anterior ceratohyal. Osteological characters are overall very similar to those of *Hemiodus (=Hemiodopsis) semitaeniata* as illustrated by Roberts (1974). Vertebrae 39 or 40 including those of Weberian apparatus and counting fused PU_1+U_1 as a single element.

Lower jaw edentulous, anterior edge sectorial. Functional teeth in a single series in upper jaw. All teeth multicuspidate; number of cusps on each tooth decreasing from 11 on medial teeth on 7 on lateral teeth. Sixteen to 18 teeth along each side of upper jaw, 10 maxillary and 8 premaxillary teeth on each side of jaw in cleared and stained specimen. Teeth extending along entire anterior edge of maxilla (see Roberts, 1974, fig. 9 for comparable situation in *Hemiodopsis semitaeniata*). One or two rows of partially formed replacement teeth internal to functional tooth row. Premaxillary replacement tooth rows embedded in flesh on inner surface of premaxilla; maxillary replacement teeth arranged in a shallow maxillary replacement-tooth trench. Dermopalatine and ectopterygoid edentulous. Ceratobranchial 5 bearing a relatively narrow band of posteriorly-directed teeth along medial and posteromedial borders. Upper pharyngeal tooth-plates 4 and 5 with bands of small, conic teeth. Ceratobranchials 2, 3, and 4 and hypobranchial 3 bearing ventrally-directed processes extending lateral to ventral aorta. Gill-rakers expanded distally, fan-shaped, with a series of pointed, digitiform processes along distal edges. Number and size of distal gill-raker processes in-

creasing towards ceratobranchial-epibranchial joint. Gill-rakers on first gill arch 38 on epibranchial and 50 on ceratobranchial in cleared and counterstained specimen.

Scales cycloid, thin. Pored lateral line scales between supracleithrum and hypural joint 93 in holotype (88 in 1 paratype, 92 in 1 paratype, 93 in 2 paratypes, 95 in 2 paratypes, 96 in 1 paratype). Five to 7 pored lateral line scales extending beyond hypural joint onto caudal fin. Scales above lateral line in a transverse series to origin of rayed dorsal fin 22 in holotype (22 in 3 paratypes, questionably 21 in 4 partially descaled paratypes). Scales below lateral line in a transverse series to origin of anal fin 14 in holotype (12 in 1 paratype, 13 in 1 paratype, 14 in 2 paratypes, 15 in 1 paratype, 2 paratypes descaled in region). Body squamation extending onto base of caudal rays. Low sheath of scales along base of rayed dorsal fin and anterior portion of anal fin. Axillary process of pelvic fin composed of a series of scales. Size of body scales only slightly graduated in a vertical series.

Rayed dorsal fin pointed but not filamentous anteriorly; second unbranched and first branched rays longest, subequal. Dorsal-fin rays ii,9 in all specimens. Adipose dorsal fin moderate, unscaled; length about two-thirds diameter of orbit. Anal fin falcate, anterior branched rays more than twice as long as posteriormost branched rays. Anal-fin rays iii-9 in holotype (ii,9-i in 1 paratype, iii-9 in 2 paratypes, ii-10 in 4 paratypes), first 2 unbranched anal rays very short. Pectoral fin pointed, reaching two-thirds distance to a vertical through insertion of pelvic fin. Pectoral-fin rays i-16-ii in holotype (i-16-ii in 3 paratypes, i-16-iii in 2 paratypes, i-17-ii in 2 paratypes). Pelvic fin pointed, reaching three-quarters distance to anus. Pelvic-fin rays i-10 in holotype (i-10 in 6 paratypes, i-11 in 1 paratype).

Coloration in alcohol.—Overall coloration silvery. Head dark dorsally, a much more intensely pigmented spot about size of pupil located on anterodorsal corner of opercle and surrounding region. Fleshy lip of premaxilla and maxilla dark. Body darker dorsal to lateral line, silvery-white ventrally. A diffuse dark lateral band slopes slightly posteroventrally from dorsal portion of opercle to base of caudal fin. Body band interrupted by an intensely pigmented, longitudinally elongate, ocellated spot. Spot straddling but located largely dorsal to lateral line, extending from slightly behind a vertical through rear of dorsal-fin insertion nearly to a vertical through posterior limit of pelvic fin; spot extending about 12 scales longitudinally and 7 vertically. Unpigmented region surrounding spot approximately 5 or 6 scales wide. Dorsal portion of body above lateral line marked by 31 to 35 dark, strongly-angled bars having the form of a "V" on its side with angle of flexure directed posteriorly. Each bar about one and one-half or two scales wide. Pigmentation pattern less apparent anteriorly and posteriorly. A series of randomly arranged spots on sides of body below lateral line, each spot about size of exposed portion of scales in that region. Rayed dorsal fin dusky, with no apparent pattern. Adipose dorsal fin dusky. Anal fin clear. Pectoral fin with narrow bands of light brown chromatophores outlining unbranched lateral fin ray and first branched ray. Anal fin with series of pale brown chromatophores outlining distal portions of rays on second through fourth branched anal rays. Lower lobe of caudal fin with a dark stripe continuous with lateral band on body. Procurrent rays and first and second principal rays of lower caudal lobes unpigmented. Procurrent rays of upper caudal lobe outlined by dark chromatophores.

Coloration in life.—Overall coloration silvery golden. Iris intense gold. Silvery coloration somewhat masking lateral body band and dorsal bars. Fins pinkish or light red.

Relationships.—Our present understanding of relationships within *Hemiodopsis* are quite poor. Indeed, no characters supporting an hypothesis of monophyly of the genus have been proposed. Within *Hemiodopsis* as presently delimited, *H. ocellata* is most similar to although necessarily most closely related to *H. parnaguae.*

Etymology.—*Ocellata,* from the Latin for little eyes, in reference to the lateral eye-like body spot.

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Department of Vertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560.